

MXV Series

VGA and Stereo Audio Matrix Switchers



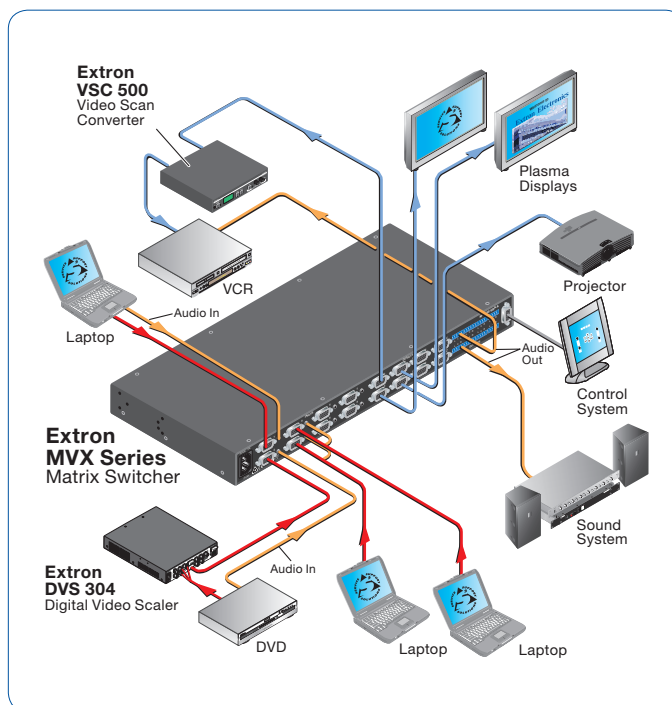
COMMON FEATURES

- **Inputs:** VGA on female 15-pin HD connectors; audio on 3.5 mm stereo mini jacks; MVX 128 VGA A - audio inputs on captive screw connectors
- **Outputs:** Video on female 15-pin HD connectors; audio on captive screw connectors
- **300 MHz (-3 dB) RGB video bandwidth, fully loaded** — Designed for routing most common high resolution computer-video rates without signal degradation. The MVX Series provides a minimum 300 MHz (-3 dB) of RGB video bandwidth at full performance capability when one input drives all outputs.
- **Compatible with RGBHV, RGBS, RGsB, and HDTV component video**
- **Switches both balanced and unbalanced stereo audio** — Output on captive screw connectors.
- **Audio breakaway** — Provides the capability to break an audio signal away from its corresponding video signal, allowing the audio and video signals from one source to be switched to different destinations.
- **Audio output volume adjustment and muting on MVX 128, 1212, 168, and 1616 models** — Can be set dynamically for each channel through the front panel, IP Link, or serial control, eliminating the need for an audio preamplifier in many system designs.
- **Audio input gain and attenuation** — Allows users to set the level of gain or attenuation for each audio input channel, eliminating noticeable volume differences when switching between sources.
- **RS-232 and RS-422 serial control port** — Using serial commands, the HDXP Plus Series can be controlled and configured via the included Windows-based control software, or integrated into third-party control systems. Extron products use the SIS™ - Simple Instruction Set command protocol, a set of basic ASCII code commands that allow for quick and easy programming. The RS-232 and RS-422 port also makes it easy to install firmware updates.
- **Switchable audio output levels** — Output levels can be switched between professional, +4dBu, and consumer levels, -10dBV. This feature is available via RS-232 serial control only and allows users to utilize a mix of professional and consumer-level equipment.
- **View I/O mode** — Available via the front panel and RS-232 serial control, users can easily view which individual inputs and outputs are actively connected.
- **QS-FPC™ - QuickSwitch Front Panel Controller** — Provides a discrete button for each input and output, allowing for simple, intuitive operation.
- **Global presets** — Individual I/O configurations may be saved and recalled either from the QuickSwitch front panel or through the serial controls. This time-saving feature allows you to set up I/O configurations and keep them in memory for future use.
- **Front panel security lockout** — Ideal for unsecured environments, this feature locks out all front panel functions; however, these same functions are available through RS-232 serial control.
- **Optional control panels and keypads** — Provide the flexibility to control a MXV Series matrix switcher from a remote location.

- **Optional IR 501 handheld infrared remote control for 4x4 through 8x8 models**
- **Rack-mountable metal enclosure**
- **Internal international power supply** — The 100-240VAC, 50/60 Hz, universal power supply provides worldwide power compatibility.

DESCRIPTION

The Extron **MXV Series** Matrix Switchers are designed to route most common high resolution computer-video signals with stereo audio. Available in I/O sizes from 4x4 to 16x16, including a new 12x12 size, the MXV Series offers wideband switching performance with the convenience of 15-pin HD connectors for all computer-video connections. MXV Series models from 4x4 to 8x8 accept unbalanced stereo audio on 3.5 mm stereo mini jacks, while the 12x8 to 16x16 sizes accept either balanced or unbalanced stereo audio on captive screw connectors. All models output balanced or unbalanced stereo audio on captive screw connectors. Using preterminated cable assemblies, such as Extron's VGA with Audio Cables, eliminates crimping and makes installations faster and easier.



Continued →

MVX Series

MVX 44 VGA A

4x4 VGA and Stereo Audio Matrix Switcher

UNIQUE FEATURES

- Four inputs on female 15-pin HD connectors; audio on 3.5 mm stereo mini jacks
- Four outputs on female 15-pin HD connectors; audio on captive screw connectors
- Optional IR 501 handheld remote control

**MODEL****VERSION DESCRIPTION****PART #**

MVX 44 VGA A

4x4 VGA and Stereo Audio..... 60-635-21

MVX 48 VGA A

4x8 VGA and Stereo Audio Matrix Switcher

UNIQUE FEATURES

- Four inputs on female 15-pin HD connectors; audio on 3.5 mm stereo mini jacks
- Eight outputs on female 15-pin HD connectors; audio on captive screw connectors
- Optional IR 501 handheld remote control

**MODEL****VERSION DESCRIPTION****PART #**

MVX 48 VGA A

4x8 VGA and Stereo Audio..... 60-636-21

MVX 84 VGA A

8x4 VGA and Stereo Audio Matrix Switcher

UNIQUE FEATURES

- Eight inputs on female 15-pin HD connectors; audio on 3.5 mm stereo mini jacks
- Four outputs on female 15-pin HD connectors; audio on captive screw connectors
- Optional IR 501 handheld remote control

**MODEL****VERSION DESCRIPTION****PART #**

MVX 84 VGA A

8x4 VGA and Stereo Audio..... 60-637-21

Continued →

MVX Series

MVX 88 VGA A

8x8 VGA and Stereo Audio Matrix Switcher

UNIQUE FEATURES

- Eight inputs on female 15-pin HD connectors; audio on 3.5 mm stereo mini jacks
- Eight outputs on female 15-pin HD connectors; audio on captive screw connectors
- Optional IR 501 handheld remote control



MODEL

VERSION DESCRIPTION

PART

MVX 88 VGA A

8x8 VGA and Stereo Audio..... 60-638-21

MVX 128 VGA A

12x8 VGA and Stereo Audio Matrix Switcher with ADSP™

UNIQUE FEATURES

- 12 inputs on female 15-pin HD connectors; audio on captive screw connectors
- Eight outputs on female 15-pin HD connectors; audio on captive screw connectors
- ADSP™ - Advanced Digital Signal Processing
- Balanced or unbalanced audio on captive screw connectors



MODEL

VERSION DESCRIPTION

PART

MVX 128 VGA A

12x8 VGA and Stereo Audio..... 60-799-01

MVX 1212 VGA A NEW

12x12 VGA and Stereo Audio Matrix Switchers with ADSP™

UNIQUE FEATURES

- 12 inputs on female 15-pin HD connectors; audio on captive screw connectors
- 12 outputs on female 15-pin HD connectors; audio on captive screw connectors
- ADSP™ - Advanced Digital Signal Processing
- Balanced or unbalanced audio on captive screw connectors
- 3U, full rack width



MODEL

VERSION DESCRIPTION

PART

MVX 1212 VGA A

12x12 VGA and Stereo Audio..... 60-858-01

Continued →

MVX Series

MVX 168 VGA A **NEW**

16x8 VGA and Stereo Audio Matrix Switcher with ADSP™

UNIQUE FEATURES

- 16 inputs on female 15-pin HD connectors; audio on captive screw connectors
- Eight outputs on female 15-pin HD connectors; audio on captive screw connectors
- 3U, full rack width



MODEL

VERSION DESCRIPTION

PART

MVX 168 VGA A

16x8 VGA and Stereo Audio 60-838-01

MVX 1616 VGA A **NEW**

16x16 VGA and Stereo Audio Matrix Switchers with ADSP™

UNIQUE FEATURES

- 16 inputs on female 15-pin HD connectors; audio on captive screw connectors
- 16 outputs on female 15-pin HD connectors; audio on captive screw connector
- ADSP™ - Advanced Digital Signal Processing
- Balanced or unbalanced audio on captive screw connectors
- 3U, full rack width



MODEL

VERSION DESCRIPTION

PART

MVX 1616 VGA A

16x16 VGA and Stereo Audio 60-839-01

MVX Series

SPECIFICATIONS

VIDEO

Gain	Unity
Bandwidth	300 MHz (-3 dB), fully loaded 0 - 10 MHz: no more than +0.14 dB to -0.1 dB 0 - 130 MHz: no more than +0.95 dB to -0.8 dB
Crosstalk	
44-88 models	<-60 dB nominal @ 10 MHz, <-39 dB @ 100 MHz
128 models	-80 dB @ 1 MHz, -55 dB @ 10 MHz, -37 dB @ 100 MHz
1212-1616 models	-80 dB @ 1 MHz, -55 dB @ 10 MHz, -45 dB @ 30 MHz, -37 dB @ 100 MHz
Switching speed	
44-88 models	20 ms (max.)
All other models	200 ns (max.)

VIDEO INPUT

Number/signal type	VGA–UXGA RGBHV, RGBS, RGsB, RsGsBs, component video (bi-level and tri-level sync), S-video, composite video
Connectors	4, 8, 12, or 16 female 15-pin HD
Nominal level	1 Vp-p for Y of component video and S-video, and for composite video 0.7 Vp-p for RGB and R-Y and B-Y of component video 0.3 Vp-p for C of S-video

Minimum/maximum levels

44-128 models	Analog: 0.3 V to 2.0 Vp-p with no offset at unity gain
1212-1616 models	Analog: 0.5 V to 2.0 Vp-p with no offset
Impedance	75 ohms

Horizontal frequency

(44-128 models)	15 kHz to 145 kHz
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Vertical frequency

(44-128 models)	30 Hz to 170 Hz
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Return loss

44-128 models	<-40 dB @ 5 MHz
1212-1616 models	<-30 dB @ 5 MHz

DC offset (max. allowable)

44-128 models	1.5 V
1212-1616 models	±1.5 mV

VIDEO OUTPUT

Number/signal type	VGA–UXGA RGBHV, RGBS, RGsB, RsGsBs, component video (bi-level and tri-level sync), S-video, composite video
Connectors	4, 8, 12, or 16 female 15-pin HD
Nominal level	1 Vp-p for Y of component video and S-video, and for composite video 0.7 Vp-p for RGB and R-Y and B-Y of component video 0.3 Vp-p for C of S-video

Minimum/maximum levels

44-128 models	0.3 V to 2.0 Vp-p (follows input)
1212-1616 models	0 V to 2.0 Vp-p (follows input)

Return loss (max. allowable)

44-128 models	<-40 dB @ 5 MHz
1212-1616 models	<-30 dB @ 5 MHz

DC offset

44-88 models	<20 mV with input at 0 offset
128 model	±5 mV with input at 0 offset
1212-1616 models	±10 mV with input at 0 offset

SYNC

Input type	RGBHV, RGBS, RGsB, RsGsBs
Output type	RGBHV, RGBS, RGsB, RsGsBs (follows input)
Standards (44-128 models)	Computer scan rates and also NTSC 3.58, NTSC 4.43, PAL, SECAM
Input level	0.5 V to 5.0 Vp-p, 4.0 Vp-p normal
Output level	AGC to TTL: 4.0 V to 5.0 Vp-p, unterminated
Input impedance	510 ohms
Output impedance	
44-128 models	75 ohms
1212-1616 models	Inputs 1 to 8: 75 or 50 ohms, switchable Inputs 9 to 12 or 16: 75 ohms
Max input voltage	5.0 Vp-p
Max. propagation delay	
44-88 models	Horizontal: 90 ns nominal Vertical: 160 ns nominal
128 model	30 ns nominal
1212-1616 models	<120 ns
Max. rise/fall time	
44-128 models	4 ns
1212-1616 models	11.5 ns
Polarity	Positive or negative (follows input)

AUDIO

Gain	
44-88 models	Adjustable. At default, overall gain is 12 dB for balanced output.
128-1616 models	Unbalanced output: -6 dB; balanced output 0 dB
Frequency response	
44-128 models	20 Hz to 20 kHz, ±0.2 dB
1212-1616 models	20 Hz to 20 kHz, ±0.05 dB
THD + Noise	
44-128 models	0.05% @ 1 kHz, 0.3 % @ 20 kHz at nominal level
1212-1616 models	0.03% @ 1 kHz at nominal level
S/N	>90 dB, balanced, at maximum output (21 dBu) (unweighted)
Crosstalk	
44-128 models	-65 dB @ 20 kHz, <-80 dB @ 1 kHz (fully loaded) or below 60 Hz
1212-1616 models	<-80 dB @ 1 kHz, fully loaded
Stereo channel separation	
44-128 models	>80 dB @ 1 kHz, >55 dB @ 20 Hz to 20 kHz
1212-1616 models	>80 dB @ 1 kHz
CMRR	>75 dB @ 20 Hz to 20 kHz

AUDIO INPUT

Connectors

44-88 models	4 or 8 female 3.5 mm stereo mini jacks: tip (L), ring (R), sleeve (GND)
128-1616 models	(8, 12, or 16) 3.5 mm captive screw connectors, 5 pole

Impedance

44-88 models	>18k ohms unbalanced, DC coupled
128-1616 models	>10k ohm, balanced/unbalanced, DC coupled

Nominal level

44-88 models	10 dBV (316 mV) (default), but also compatible with +4 dBu (1.23 V), 0 dBu (0.775 V), 20 dBV (100 mV)
128 model	0 dBV, 0 dBu
1212-1616 models	-10 dBV (316 mVrms), 0 dBu (775 mV)

Maximum level

44-88 models	>+12 dBV (4 V), (unbalanced) at 1% THD+N
128 model	>+19.5 dBu (7.316 V), (balanced/unbalanced) at 0.01% THD+N
1212-1616 models	+19.5 dBu, (balanced or unbalanced) at 0.01% THD+N

Input gain adjustment

44-88 models	18 dB to +10 dB, adjustable per input; default = 0 dB.
128 - 1616 models	-18 dB to +24 dB (default = 0 dB), adjustable per input by RS-232/422 or front panel

NOTE: 0 dBu = 0.775 Vrms, 0 dBV = 1 Vrms, 0 dBV ≈ 2 dBu

AUDIO OUTPUT

Output gain (44-128 models)	0 dB unbalanced (consumer) or +12 dB balanced (pro), selectable; default = +12 dB, balanced, when output level is set to "Pro"
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Connectors

44-88 models	(4, 8, 12, or 16) 3.5 mm captive screw connectors, 5 pole
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Impedance

44-88 models	50 ohms unbalanced, 100 ohms balanced
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Gain error

44-88 models	±0.1 dB channel to channel
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Nominal level (output volume range)

44-88 models	+4 dBu (1.23 V) (default) balanced, or -10 dBV (316 mV) unbalanced
128-1616 models	0 to 64 (-75.8 dB to 0 dB) in 1 dB increments from steps 1 to 64, 12 dB increment from step 0 to 1

Maximum level (Hi-Z)

44-88 models	>+22 dBu, balanced; >+14 dBV, unbalanced at 1% THD+N at default settings
128-1616 model	>+21 dBu, balanced or unbalanced, at 0.1% THD+N at default settings

Maximum level (600 ohm)

44-88 models	>+20 dBu, balanced; >+12 dBV unbalanced at 1% THD+N at default settings
128 model	>+15 dBm, balanced or unbalanced, at 0.1% THD+N at default settings
1212-1616 models	>+15 dBm, balanced or unbalanced at 0.1% THD+N

Output volume range

(128-1616 models)	0 to 64 (-75.8 dB to 0 dB) in 1 dB increments from steps 1 to 64, 12 dB increment from step 0 to 1; default = 64 = 0 dB
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CONTROL/REMOTE — SWITCHER

Serial host control port

44-88 models	1 RS-232, 9-pin female D connector
128 model	1 RS-232 or RS-422, 9-pin female D connector
1212-1616 models	1 bidirectional RS-232 or RS-422, rear panel 9-pin female D connector 1 bidirectional RS 232, front panel 2.5 mm mini stereo jack

Baud rate and protocol

44-88 models	9600, 8-bit, 1 stop bit, no parity
All other models	9600 (default), 19200, 38400, 115200 baud (adjustable); 8 data bits, 1 stop bit, no parity

Serial control pin configurations

44-88 models	2 = TX, 3 = RX, 5 = GND, 9 = hardwired IR input
128-1616 models	
RS 232	9-pin female D connector: 2 = TX, 3 = RX, 5 = GND Mini stereo jack: tip = TX, ring = RX, sleeve = GND
RS 422	9-pin female D connector: 2 = TX-, 3 = RX-, 5 = GND, 7 = RX+, 8 = TX+

IR controller module

44-88 models	IR 501 (optional remote control for 44-88 models)
Program control	Extron's control/configuration program for Windows® Extron's Simple Instruction Set (SIS™)

GENERAL

Power	100 VAC to 240 VAC, 50/60 Hz, internal
44-128 models	30 watts
1212-1616 models	48 watts
Temperature/humidity	Storage: -40 to +158 °F (-40 to +70 °C) / 10% to 90%, noncondensing Operating: -32 to +122 °F (0 to +50 °C) / 10% to 90%, noncondensing
Cooling	Convection, vented
Rack mount	
44-128 models	Yes, with included brackets, part #70-077-03
1212-1616 models	Yes
Enclosure type	Metal
Enclosure dimensions (Depth excludes knobs and connectors. Width excludes rack ears.)	
44-88 models	1.75" H x 17.4" W x 8.5" D (1U high, full rack wide) 4.4 cm H x 44.2 cm W x 21.6 cm D
128 model	3.5" H x 17.4" W x 9.4 D (2U high, full rack wide) 8.9 cm H x 44.2 cm W x 23.9 cm D
1212-1616 models	5.25" H x 17.0" W x 9.4" D (3U high, full rack wide) 13.3 cm H x 43.2 cm W x 23.9 cm D

Product weight

44-88 models	7.0 lbs (3.2 kg)
128 model	21 lbs (9.5 kg)
1212-1616 models	14.4 lbs (6.5 kg)

Shipping weight

44-88 models	10 lbs (5 kg)
128 model	25 lbs (12 kg)
1212-1616 models	21 lbs (10 kg)
DIM weight, international	25 lbs (12 kg)

Vibration

44-88 models	ISTA 1A in carton (International Safe Transit Association)
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Listings

44-88 models	UL, CUL
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Compliances

44-88 models	CE, FCC Class A, VCCI, AS/NZS, ICES
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MTBF

44-88 models	30,000 hours
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Warranty

44-88 models	3 years parts and labor
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NOTE: All nominal levels are at ±10%. Specifications are subject to change without notice.